

**COUNTY OF YORK, VIRGINIA**  
**REQUEST FOR PROPOSALS**  
**RFP**

Issue Date: August 30, 2006

RFP #: 1531

Title: Acquisition of LiDAR / DEM / Contours

Classification Code: 90504/92033

Issuing Agency:

County of York, Virginia  
Central Purchasing  
120 Alexander Hamilton Blvd.  
P.O. Box 532  
Yorktown, Virginia 23690

Using Agency And/Or Location

Where Work Will Be Performed:

Computer Support Services  
120 Alexander Hamilton Blvd.  
Yorktown, Virginia 23690

Sealed Proposals Will Be Received Until 5:00 p.m. on September 27, 2006  
At Which Time They Shall Be Opened In Public.

**NOTE:** Six (6) copies of your Proposal will be required.

All Inquiries For Information Should Be Directed To: T.W. Sawyer, CPPO, Purchasing Agent,  
Telephone: (757) 890-3680.

SEND PROPOSALS DIRECTLY TO THE ISSUING AGENCY SHOWN ABOVE.

In Compliance With This Request For Proposal, The Undersigned Offers To Provide The Requested Service(s) Shown in the Attached/Enclosed (A signed Letter of Transmittal may be substituted for this cover page).

Name and Address of Firm:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Zip Code

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Signature in ink

\_\_\_\_\_  
Title

Telephone No.: ( ) \_\_\_\_\_ Federal Tax ID# \_\_\_\_\_

**1.0 PURPOSE:**

It is the express purpose of this Request for Proposal (RFP) to contract for the following services: Light Detection and Ranging (LIDAR) / Digital Elevation Model (DEM) / Contours for the County of York, Virginia (hereinafter "Owner") and, optionally, any additional agencies as authorized by the "Cooperative" paragraph herein entitled "Cooperative Procurement" (Section 14.0). It is the Owner's goal to proceed with the project in early 2007.

Please note if any of the items in paragraph 2.0 "Scope of Services" are deemed by an Offeror to be inappropriate with Owner's needs, qualified Offerors should be aware that strict compliance with Scope of Services and other specifications in this RFP is less important than the correct process that will provide Owner with quality deliverables that meet Owner's needs.

**1.1 BACKGROUND:**

The County of York is located near the mouth of the York River in the southeastern portion of the Commonwealth of Virginia. The area is a popular tourist destination, having historical significance during both the Revolutionary and Civil Wars. The County is approximately 106 square miles, with roughly one third of the County's land area controlled by federal agencies. There are approximately 24,500 tax parcels, and a current population of approximately 63,700.

The Owner has consistently maintained digital base mapping since 1990 when mylar orthophotography and topographic layers were captured by PhotoScience, Inc. (now EarthData). The tax parcels and planimetric layers were digitized and tied to this base. The photography was updated again in 1995, 1997, 1999, 2002 and 2005 by VARGIS, LLC, using the same ground control established in 1990. Until 1999, the photography was acquired in black and white at 1" = 100' scale (1/2 foot pixel resolution), and from 1999 on, has been in natural color at 1" = 200' scale (1 foot pixel resolution).

The County has undergone considerable development and growth since 1990, and may have had a significant amount of earth moved in the process. This factor, combined with increased attention on hurricane preparedness and protection of the Chesapeake Bay, makes adding the analytical capabilities of LiDAR and updating our topographic layers a sound and responsible action. This data will be used for a variety of purposes including updating topographic maps, hydrologic modeling, utility planning, and assessment of natural hazards.

**1.2 GLOSSARY:**

ASPRS – American Society of Photogrammetry and Remote Sensing  
DEM – Digital Elevation Model  
DTM – Digital Terrain Model  
ESRI – Environmental Systems Research Institute  
FEMA - Federal Emergency Management Agency  
FGDC – Federal Geographic Data Committee  
FIRM – Flood Insurance Rate Maps  
FGDC – Federal Geographic Data Committee  
LiDAR - Light Detection and Ranging  
NDEP – National Digital Elevation Program  
NSSDA – National Standard for Spatial Data Accuracy  
QA/QC – Quality Assurance/Quality Control  
RSME – Root Mean Square Error

RSMEz – Root Mean Square error of the “z”, where “z” refers to elevation accuracy, rather than horizontal.

RTK - Real Time Kinematic

TIN - Triangular Irregular Network

## 2.0 SCOPE OF SERVICES:

The Project Area is approximately 80 square miles. This area includes York County, less the Federally-controlled areas, as well as a 200' buffer zone outside its corporate limits. (See attachment A; Project Area Map).

All deliverables provided to Owner will be in State Plane Coordinate System, NAD83 Virginia South Zone (4502), NAVD88 in US Survey Feet. Digital files must be IBM-PC compatible and delivered on CD-ROM, DVD, or portable hard drives. Owner will own all deliverable work products. Thorough documentation must be provided to the Owner for accuracy and file formats that deliverables can be expected to be returned in.

Owner desires that Offerors be capable of providing GIS services, or provide the Owner with the qualifications of a subcontractor for any such services the County may require throughout the duration of this project. Offerors must provide a copy of any such subcontract, or commitment, entered into with a subcontractor.

Contracts will be with Owner. All work will be conducted under the direction of a review committee appointed by Owner. Owner's staff will perform project management and additional quality assurance, with the probable assistance of an outside contractor.

For this project, Owner will provide the successful Offeror with all available source documents at hand that are deemed as relevant by the review committee. These documents may include ground control coordinates, existing digital orthophotography information, GIS vector data and/or existing planimetric data.

The specifications below are suggestions. It is our hope that responding Offerors will provide the best solution to meet the end products listed. Owner is willing to consider revisions to the scope of work based on the experience of the Contractor. The first task for the selected contractor will be a review of the scope of services and recommendations to the County regarding any necessary changes. Contractors are encouraged to suggest any innovative approaches that are not addressed in this RFP. Changes to the scope of services will only be considered after the Contractor has been selected. The target completion date for the final agreement on the project scope of services is 2007.

Detailed methodology must be proposed for each of the following:

### A. LiDAR **Specifications:**

The Offeror shall describe proposed LiDAR system to acquire data for use in creating the required DTM. The proposal shall contain detailed information regarding the collection and control methodology, collection sensor, process and software used for post processing, QA/QC procedures, and acceptance test procedures.

Specifically, the LiDAR flight plans should contain parameters of flight height to meet or exceed the corresponding FEMA specifications of LiDAR (2-foot contours). The Offeror should include the differences in processing and planning and QA/QC that will be used to process the 2 foot contour datasets.

The Offeror's proposal should follow guidelines and standards set forth in FEMA Guidelines and Specifications for Flood Mapping Partners, Appendix A, [http://www.fema.gov/pdf/fhm/frm\\_gsaa.pdf](http://www.fema.gov/pdf/fhm/frm_gsaa.pdf).

### **Equipment**

The Offeror shall clearly identify the equipment (aircraft, sensor, etc.) to be used to collect LiDAR data.

### **Collection**

Specifications and methodology for the LiDAR flight should include documentation of mission date(s), time, flight altitude, overlap, and airspeed. Flight plans shall be generated and should cover the proposed project areas. Proposal should address how various environmental conditions will be handled and any special considerations within the project area of dense coverage (e.g., locations containing dense foliage), water surface or others.

A complete survey control plan shall be submitted to include collection, processing and incorporation of survey control in the LiDAR processing. The plan should include a detailed description of survey control for quality control and validation checks of the LiDAR dataset. Describe kinematic survey to validate LiDAR dataset. Specifications for the data collection should include scan angle, along-track, and cross-track, pulse spacing, pulse width and density, and number of returns. LiDAR derived data will have the accuracy required to produce topographic maps including 2- foot elevation contours.

Proposed data products shall be prepared to meet the accuracy requirements of ASPRS Guidelines for Vertical Accuracy Reporting for LiDAR Data, Version 1, May 2004.

Offeror should describe the production process used for vegetation or structure (e.g., buildings) removal in order to determine bare-earth representation. Offeror should describe the approach to definition and resolution of data voids and data artifacts resulting from the mission. Offeror should describe quality assurance and quality control (QA/QC) procedures to ensure the integrity of the LiDAR data. Offeror should describe acceptance test procedures to be used to ensure data conforms to the accuracy requirements.

### **LiDAR Digital Terrain Datasets Specifications**

After LiDAR acquisition and post processing 95% of all well-defined points will be within 30 centimeters or approximately (0.98') and 65% of all points to be within fifteen centimeters (15cm) or approximately one-half foot (0.5') or 15cm Root Mean Square

(RMS) as defined by the National Standard for Spatial Data Accuracy (NSSDA) when compared to “hard point” control vertically. The final results may be better than the above stated accuracy.

Average return per square meter shall be two (2) points and is to be used for the development of the final DTM. The actual number of raw points may be higher.

The following deliverable products are desired:

1. Pre-flight mission planning data in the form of a digital image depicting the flight line map and control plan.
2. Mission report describing system calibration and validation of data collection procedures in ASCII file format.
3. LiDAR data to include classified reflective return data in .LAS or other agreed upon open format.
4. Metadata.

#### **Digital Terrain Datasets (includes DTM and DEM) and Contour Data Requirements**

Digital Terrain Datasets shall be produced for Project Area to support generation of ortho imagery, 3D visualization, change detection and 2 foot contour generation with breakline data. Digital Terrain Datasets should be produced using LiDAR technology with a combination of stereo compilation for above specified breaklines.

The County desires to obtain Digital Terrain Datasets that include:

1. A Digital Surface Model (DSM) dataset containing the LiDAR mass points and breaklines used to generate subsequent elevation products.
2. A Digital Terrain Model (DTM) representing the bare-earth terrain including all appropriate breaklines.
3. Topographic contours at a minimum of 2 ft. for Project Area.
4. A Digital Elevation Model (DEM) dataset representing the bare-earth in grid format.

Offeror should describe the methodology for creating the Digital Terrain Datasets using stereo edited LiDAR data. To generate accurate contours at a 2 foot interval, we highly recommend that the LiDAR DTM points will be enhanced with photogrammetrically compiled breaklines. Breaklines are defined as ridgelines, retaining walls, edges of pavements or hydrographic features. Offeror should describe how breaklines will be compiled and the source of the photography (none will be provided by the County). If existing photography is used, it should be no more than 2 years old. The LiDAR data points together with the breaklines will form a TIN (Triangular Irregular Network) from which the contours are generated.

Regardless of the source data and development method(s) used, the data shall meet the accuracy requirements of ASPRS Guidelines for Vertical Accuracy Reporting for LiDAR Data, Version 1, May 2004. Proposals should provide a detailed description of the input data, production process, quality assurance/quality control, and proposed acceptance test methodology for providing the digital terrain data required by this effort.

**Metadata**

FGDC-compliant metadata will be provided for the deliverable topographic data sets. These metadata will be completed using standard industry metadata tools and output in standard file formats for viewing in all widely available viewing utilities.

The Digital Terrain Datasets shall comply with the following requirements:

1. The DTM spacing shall be 5 foot and 10 foot.
2. The DTM shall comply with National Standard for Spatial Data Accuracy (NSSDA) specification for 2 foot contouring, i.e., accuracy (z) of 1.19 foot at the ninety-five percent (95%) confidence level.
3. The horizontal component of the DTM shall comply with National Standard for Spatial Data Accuracy (NSSDA) specification for 1:1200 mapping, i.e., accuracy (r) of 3.80 foot at the ninety-five percent (95%) confidence level.

**Deliverables**

1. Project documentation outlining procedures and data collected, and reports of accuracy evaluation.
2. First return data in ArcGIS format, .las format and Microstation compatible format.
3. Bare-earth DTM incorporating the last return LiDAR data in ArcGIS format (3-D shapefile or personal geodatabase), .las format and Microstation compatible format.
4. FGDC compliant metadata.

**B. Contours with 2 Foot Interval**

The successful Offeror (hereafter “Contractor”) will be responsible for generating contours with 2 foot intervals for Project Area using DTM prepared from LIDAR data and breaklines. Contour lines should be seamless for the entire area as specified.

**Contours, Breaklines, and Spot Elevations**

The contour delivery will be a seamless, county-wide set of 2-foot contours generated from the DEM bald earth surface. The successful Contractor will add breaklines at places where the terrain must be defined in order for the contours to accurately reflect the ground elevation and slope.

Spot elevations shall be depicted at road intersections, hilltops, saddles, bottom of valleys and depressions, ends of bridges, and railroad grade crossings and as required meeting the standards for 1"=100', 2' contour interval mapping.

Contours will be delivered in ESRI personal geodatabase format, with attribute information depicting the elevations. Products will be delivered on CD-ROM, DVD, or portable hard drives.

- Describe your process for calculating contours
- Describe your process for adding breaklines and supplemental elevation data
- Describe your process for deriving spot elevations.
- Describe the quality control checks used.

### **Deliverables**

1. ArcGIS personal geodatabase with seamless contours, spot elevations and attribution for both conforming to the County's existing dataset(s).

### **C. Digital Elevation Model (DEM)**

A digital elevation model DEM (bald surface) of York County is to be created for registration of 6-inch pixel or better orthophotography, with no warping or ghosting. This DEM must be sufficiently accurate so that planimetric and cadastral vectors will not move significantly from year to year.

The bald earth surface shall be free of all buildings, trees and other items above the ground surface (with the exception of bridges and overpasses for use during the image orthorectification).

- Describe the process for removing non-terrain LIDAR points.
- Describe your recommendation for the density of mass points. Describe any process for weeding extraneous terrain points.
- Describe whether you will need to add breaklines to assure accurate registration of the orthophotography in order to prevent warping at bridges and ghost images between photos and flightlines.
- Describe the known accuracy and error.
- Describe how we can independently verify the accuracy of the points.

### **D. Digital Terrain Model (DTM)**

#### **DTM Vertical Accuracy Testing and Reporting**

The Digital Terrain Datasets are required to have a vertical RMSE (RMSE<sub>z</sub>) of 18.5-cm, and NSSDA vertical accuracy of 36.3-cm at the 95% confidence level (Accuracy<sub>z</sub>). The Contractor shall do a quantitative assessment of the DTM for vertical accuracy by two different sets of guidelines described below. The final DTM will consist of LiDAR last-return data, post-processed to generate a bare-earth surface, then supplemented with breaklines from stereo photogrammetry as required to support three applications: (1) orthorectification of digital orthophotos, (2) generation of 2' elevation contours, and (3)

hydrologic and hydraulic modeling of floodplains for revised Flood Insurance Rate Maps (FIRMs). The Contractor shall evaluate the DTM' consistent with two different guidelines: (a) FEMA's "Guidelines and Specifications for Flood Hazard Mapping Partners," Appendix A, *Aerial Mapping and Surveying*, (April, 2003) and (b) "ASPRS Guidelines for Vertical Accuracy Reporting for LiDAR Data" (May, 2004). The FEMA guidelines are consistent with current NSSDA procedures that assume all DTM errors follow a normal error distribution, whereas the ASPRS guidelines, originally developed by the National Digital Elevation Program (NDEP) which has submitted changes to the NSSDA, assume LiDAR-derived DTM' have errors that do not follow a normal error distribution, primarily because of non-random processes for removal of buildings and vegetation from LiDAR last returns.

Both of these guidelines require separate accuracy reporting by major land cover categories that typically yield different accuracy statistics. Both vertical accuracy testing and reporting processes will be based on the following land cover categories: (1) Open terrain, e.g., grass, dirt, sand, rock; (2) Tall weeds and crops; (3) Scrub and bushes; (4) Forested; and (5) Built-up areas.

#### **Qualitative Review of DTMs**

The DTM consists of mass points and breaklines. The successful Contractor shall assess the DTM to determine: (a) adequacy of LiDAR point density; (b) overall cleanliness of DTM, to include absence of major uncleaned artifacts, spikes, voids, or visible systematic errors that would impact the accuracy of contours; (c) adequacy of breaklines so that bridges, roads and culverts are not visually distorted at full scale of orthophotos; (d) adequacy of breaklines for dual-line streams over 10' wide with visible shorelines; and (e) leveling of shorelines for lakes and reservoirs.

#### **Review of DTMs for Completeness and Correctness**

The Offeror shall review each of the deliverables for correct geographic coverage, file naming convention, gaps and overlap, and to ensure that DTM tiles meet specifications.

#### **Individual Tiles**

The Contractor shall check all DTM tiles in a production block to ensure the delivery is complete and correct. No gaps are allowed between tiles. No overlaps are allowed between tiles. Tiles shall be named based on County provided naming convention. Each tile shall be checked to see that it is named properly, and the name properly reflects its correct geographic location in the County.

### **E. Acceptance Criteria**

As well as meeting the standards described previously, the County also requires that the horizontal control for all deliverables match that of existing topographic data.



**F. Quality Assurance and Quality Control (QA/QC) Process**

At a minimum, the following QA/QC process shall be performed on all finished products and final deliverables prior to delivery of the data to the County. For this purpose, the County will prepare a set of "hidden" control points, which will be used by the contractor. Also, the County will do additional random QA/QC to assure that all received products are in compliance with specified technical specifications and standards. All QA/QC issues should be addressed by the Offeror in their response to the Request for Proposal.

**3.0 GENERAL TERMS AND CONDITIONS:****Applicable Policy:**

This solicitation is subject to the provisions of the County of York, Virginia, Procurement Policy (Ordinance No. 05-24 effective October 25, 2005), and any revisions thereto.

**Mandatory Use of County Form:**

All responses to an Invitation for Bid (IFB) must be submitted on and in accordance with this form. If more space is required to furnish a description of the commodities and/or services offered or delivery terms, the bidder may attach a letter hereto which will be made a part of the bid. All bids must be submitted in a sealed envelope plainly marked using the IFB number, date and time.

**Opening Date/Time:**

Bids and amendments thereto, or withdrawal of bids submitted, if received by the Owner after the date and time specified for scheduled receipt, will not be considered. It will be the responsibility of the Bidder to see that his bid is in this office by the specified time and date. There will be no exceptions. Date of postmark will not be considered. Phone or telegraphic bids (including FAX) will not be accepted.

**Inconsistencies In Conditions:**

In the event there are inconsistencies between the General Terms and Conditions and the Special Terms and Conditions, if any, and/or other schedules contained herein, the latter two shall take precedence.

**Clarifications of Terms:**

If any prospective bidder has questions about the specifications or other solicitation documents, the prospective bidder should contact the buyer whose name appears on the face of the solicitation. Any revisions to the solicitation will be made only by written addendum issued by the Owner.

**Testing/Inspection:**

The Owner reserves the right to conduct any test/inspection it may deem advisable to assure supplies and services conform to the specification.

**Invoices:**

Invoices for goods ordered, delivered and accepted shall be submitted direct to 'INVOICE TO:' address shown on the purchase order/contract. All invoices shall show the contract number and/or purchase order number. Any payment terms requiring payment in less than 30 days will be regarded as requiring payment 30 days after invoice or delivery, whichever occurs last. However, this shall not affect offers or discounts for payment in less than 30 days.

Default:

In event of default by the Contractor, the Owner reserves the right to procure the commodities and/or services from other sources, and hold the Contractor liable for any excess cost occasioned thereby. If, however, public necessity requires the use of materials or supplies not conforming to the specifications, they may be accepted and payment therefor shall be made at a proper reduction in price.

Ethics in Public Contracting:

By submitting their proposal, all Offerors certify that their proposals are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other bidder, supplier, manufacturer or subcontractor in connection with their proposal, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised unless consideration of substantially equal or greater value was exchanged.

ANTI-DISCRIMINATION:

By submitting its proposal, Offeror certifies to the Owner that it will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Act of 1975, as amended, and Section 2.2-4311 of the Virginia Public Procurement Act which provides:

In every contract over \$10,000, the provisions of a. and b. below apply:

- a. During the performance of this Contract, the Contractor agrees as follows:

The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

Contractor, in all solicitations for advertisements for employees placed in behalf of Contractor, will state that Contractor is an equal opportunity employer.

Notices, advertisements and solicitations placed in accordance with Federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

During the performance of this contract, the Contractor agrees to (i) provide a drug-free workplace for the Contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor.

- b. Contractor will include the provisions of a. above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
- c. In accordance with §2.2-4343.1 of the **Code of Virginia**, et. seq., the owner shall not (i) discriminate against a faith-based organization as defined in Code of Virginia section 2.2-4343.1(B) on the basis of the organization's religious character or (ii) impose conditions that (a) restrict the religious character of the faith-based organization, except as provided in subsection F of section 2.2-4343.1 the Code of Virginia, or (b) impair, diminish, or discourage the exercise of religious freedom by the recipients of such goods, services, or disbursements.

Immigration Reform And Control Act of 1986:

By signing this bid or proposal, the bidder certifies that it does not and will not during the performance of this contract violate the provisions of the Federal Immigration Reform and Control Act of 1986, which prohibits employment of illegal aliens.

Indemnity:

The following shall be deemed incorporated into any contract awarded as a consequence of this bid to the same extent as if fully set forth therein:

Contractor and all subcontractors shall bear all loss, expense (including reasonable attorney's fees) and damage in connection with, and shall indemnify Owner against and save Owner harmless from all claims, demands, and judgments made or recovered against Owner because of bodily injuries, including death at any time resulting therefrom, and/or because of damage to property, from any cause whatsoever, arising out of, incidental to, or in connection with the work, whether or not due to any act of his or their employees, servants or agents and whether or not due to any act of omission or commission, including negligence but excluding sole negligence, of the

Owner, his employees, servants, or agents. Compliance by the Contractor with the insurance provisions hereof shall not relieve Contractor from liability under this provision.

Should Contractors or subcontractors use any of Owner's equipment, tools, employees, or facilities, such will be gratuitous and Contractor shall release Owner from and indemnify and save harmless Owner from and against any claims for personal injuries, including death, arising out of the use of any such equipment, tools, employees, or facilities, whether or not based upon the condition thereof or any alleged negligence of Owner in permitting the use thereof.

4.0 INFORMATION FOR OFFERORS RESPONDING TO REQUEST FOR PROPOSAL:

1. Award will be made to the most responsible and responsive offeror, determined as described herein.
2. Acceptance of a proposal by the County is not an order to proceed.
3. All proposals must be signed with the firm name and by a responsible officer or employee. Obligations assumed by such signature must be fulfilled. ". In the case of a limited liability company, the bid must be signed by the manager (if any) or by a member.
4. Verify your proposals before submission as they cannot be withdrawn or corrected after being opened.
5. If you do not offer, return the cover sheet and state reason. Otherwise your name may be removed from our mailing list.

5.0 WORK PLAN:

The mission must be flown between December 2006 and March 2007, unless for good cause the Owner agrees to an extension of time. The project will be flown in leaf-off conditions when the project area is free of clouds, haze, fog, dust, smoke, snow, floodwaters, and when shadows will be less. The successful Contractor is required to notify Owner before the flight begins of the following items:

- Describe mobilization costs
- Describe the method(s) involved in data capture
- Describe the method(s) involved in data processing
- Describe the LIDAR cloud specifications (horizontal point density, horizontal and vertical RMS error, ground footprint size, pulse rate, other relevant technical data).
- Describe the expected horizontal and vertical accuracy of LIDAR versus Real Time Kinematic (RTK) or survey grade GPS.
- Describe the LIDAR collection device, including the tests that have been used to calibrate the equipment.
- Describe the LIDAR collection mission (flight height, flight-line sidelap, point density).
- Describe the aircraft, navigation and mission planning activities.

- Describe any photo or video products collected during the LIDAR mission.
- Describe any byproducts such as a Triangular Irregular Network (TIN) or Digital Elevation Model (DEM).
- Describe the quality control processes to be used to eliminate missing coverage, invalid point locations, or elevations. Define how you will correct bad data.
- Describe how the Contractor will provide quality assurance and quality control for a project of this nature insuring quality deliverables.

6.0 EXPECTATION OF VENDORS:

Offerors should have experience with LIDAR data acquisition and processing in combination with photogrammetry contour mapping. Offerors should be proficient in ESRI's suite of software products and must be capable of delivering data in ESRI product formats.

It is understood that during the course of this project the successful Contractor may need to subcontract in order to perform certain required tasks and must obtain approval from the authorized Owner's project manager for each such subcontractor.

Offerors should anticipate that data will be independently validated by Owner. Owner reserves the right to reject deliverables that do not meet Owner's specifications.

Owner expects close project management, defined quality assurance and quality control techniques, and continuous communication throughout the duration of the contract.

7.0 PROPOSAL PREPARATION AND SUBMISSION REQUIREMENTS:

**A. RFP Response:** In order to be considered for selection, Offerors must submit a complete response to this RFP. Six (6) bound copies of each proposal must be submitted to:

County of York, Virginia  
Department of Financial and Management Services  
Attention: Division of Central Purchasing  
120 Alexander Hamilton Blvd.  
Yorktown, VA 23690-0532

**B. RFP Due date/Opening date and hour: 5:00PM September 27, 2006.**

**C. Proposal Preparations**

- Proposal shall be signed by an authorized representative of the Offeror. All information requested should be submitted. The GIS Manager and/or designee(s) will review all proposals to ensure required information is included. Failure to submit all information requested may result in a request to submit the missing information. Proposals, which are substantially incomplete or lack key information, may be rejected as incomplete. Mandatory requirements are those required by law or regulation or are such that they cannot be waived and are not subject to negotiation.

- Proposals will be reviewed and evaluated by a Committee as designated by The County.
- Proposal should be prepared simply and economically, providing a straight forward, concise description of capabilities to satisfy the requirements of the RFP. Emphasis should be placed on completeness and clarity of content.
- Proposals should be organized in the order in which the requirements are presented in the RFP. All pages of the proposal should be numbered. If a response covers more than one page, then the proposal should contain a table of contents which cross references the RFP requirements. Information, which the Offeror desires to present, that does not fall within any of the requirements of the RFP should be inserted at an appropriate place or be attached at the end of the proposal and designated as additional material. Proposals that are not organized in this manner risk elimination from consideration if the evaluators are unable to find where the RFP requirements are specifically addressed.
- Each copy of the proposal should be bound or contained in a single volume where practical. All documentation submitted with the proposal should be contained in that volume.
- Ownership of all data, materials and documentation originated and prepared for The County pursuant to the RFP shall belong exclusively to The County and be subject to public inspection in accordance with the Virginia Freedom of Information Act. Trade secrets or proprietary information submitted by an Offeror shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the Offeror must invoke the protections of Section 2.2-4342D of the Code of Virginia, in writing, either before or at the time the data or other materials to be protected and state the reasons why protection is necessary. The proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining and must indicate only the specific words, figures, or paragraphs that constitute trade secret or proprietary information. The classification of an entire proposal document, line item prices and/or total proposal prices as proprietary or trade secrets is not acceptable and will result in rejection of the proposal.
- Submit written material to support the project plan to meet the requirements described above. York County prefers that responses be fewer than about 30 single-sided pages.

#### 8.0 PROPOSAL RESPONSE FORMAT:

In order to simplify the process and to obtain the maximum degree of comparability, the proposal should be organized in the following manner:

##### **A. Cover Letter**

**B. Executive Summary** – Offeror should clearly communicate the understanding of the work and project approach.

**C. Work Plan / Schedule** - Offerors are asked to include a work plan with descriptions of tasks, products, milestones, and time tables. Task descriptions should fully discuss the steps to be followed in carrying out the work. Sufficient detail should be presented to show a clear understanding of the work and the proposed approach. A detailed time table should accompany the work description showing the expected sequence of tasks and resource requirements for both the contractor and York County.

**D. Personnel Resources** – This section, at a minimum should include the following:

- i. Project Manager
- ii. List of subcontractors & their roles
- iii. Organizational Chart – List all key personnel, roles & show how the project will be organized and managed.
- iv. Resumes - Include the resumes of project manager as well as all key personnel who will play a significant role in the ensuing project.

**E. References** - Please provide three (3) recent references, preferably in Virginia or an area similar to York County, for whom you have provided the type of services described herein. Include the date(s) services were furnished, the client name, address and the name and phone number of the individual York County has your permission to contact. York County reserves the right to call and/or visit, your project references.

**F. Cost Proposal** - Offerors shall provide to Owner an estimated cost breakdown (line items) to perform all work requested in this RFP. Final costs will be negotiated with the selected contractor. In the event an agreement on cost cannot be negotiated, Owner reserves the right to negotiate with an alternative contractor.

**E. QA/QC** - The Owner requests that the Contractor should design their internal monitoring (QA/QC) process using ArcGIS software.

#### 9.0 **AWARD OF CONTRACT:**

Two or more Offerors deemed to be fully qualified and best suited among those submitting proposals will be identified on the basis of the evaluative criteria stated in the Request for Proposals.

Repetitive informal interviews shall be permissible wherein offerors are encouraged to elaborate on their qualifications, performance data, staff expertise pertinent to the proposed services, as well as alternate concepts.

At the conclusion of discussions, outlined above, on the basis of evaluative criteria published in this RFP and all information developed in the selection process to this point, the Evaluation Committee shall select, in the order of preference, two or more offerors whose professional qualifications and proposed services are deemed most meritorious.

Negotiations will then be conducted beginning with the Offeror ranked first. If a contract which is satisfactory and advantageous to the public body can be negotiated at a price considered fair and reasonable, the award will be made to that Offeror. Otherwise, negotiations with the Offeror ranked first will be formally terminated and negotiations conducted with the Offeror ranked second, and so on until a contract can be negotiated at a fair and reasonable price.

Should the Evaluation Committee determine in writing and in its sole discretion that only one Offeror is fully qualified, or that one Offeror is clearly more highly qualified and suitable than the others under consideration, a contract may be negotiated and awarded to that Offeror. (Code of Virginia, 2.2-4301.) At any time during the negotiations, the Purchasing Office may terminate all negotiations and re-advertise the requirement.

#### 10.0 EVALUATIVE CRITERIA:

Submittals will be reviewed by a designated review committee and any other staff needed. Owner may contact you if we have questions. Each proposal will be evaluated on the following criteria:

Experience, technical capabilities, professional competence, and qualifications of the Offeror(s) and of the proposed personnel assigned to provide the services in accordance with the Mapping Display Requirements. For maximum points, experience must be on projects with similar characteristics, preferably in VA (Experience & Capability) (maximum 20% if no VA experience).	<b>25%</b>
Clearly demonstrated understanding of the work to be performed and completeness and reasonableness of the qualified Offeror's plan for accomplishing the Scope of Services. (Technical Approach)	<b>25%</b>
References (max 10% if no VA references)	<b>20%</b>
Past cost performance, project scheduling performance and general overall completion on time of past projects	<b>10%</b>
Project Costs	<b>20%</b>

From this proposal, one or more qualified Offerors may be selected to present their project plan to the review committee and/or any other designated person or persons. The Offeror may wish to present the following information: demonstration of imagery features, descriptions of similar projects completed by the firm, and any unique features of the firm's proposal. Offerors may also wish to provide samples of materials that have been developed for other geographic areas. Oral presentations, if requested, will take place at York County town hall.

We reserve the right to contract with one or more qualified Offerors to this RFP for all or any portion of the services described herein. York County also reserves the right to reject all responses or any



portion thereof.

14.0 PAYMENT PROCEDURES:

The County will authorize payment to the Contractor after receipt of Contractor's correct invoice for services rendered. Invoices shall be sent to:

York County  
Attention: Accounts Payable  
Department of Financial and Management Services  
120 Alexander Hamilton Blvd.  
Yorktown, VA 23690-0532

12.0 CONTRACT PERIOD:

The term of this contract will be negotiated; but shall not exceed five (5) years.

14.0 COOPERATIVE PROCUREMENT:

This solicitation is being conducted under the provisions of § 2.2-4304 of the Virginia Public Procurement Act (VPPA), "Cooperative Procurement", such that a public body may purchase from Owner's contract even if it did not participate in this Request for Proposal (RFP).

If authorized by the Contractor, the contract resulting from this RFP may be extended to any jurisdiction within the Commonwealth of Virginia to purchase at contract prices in accordance with contract terms. Any jurisdiction using the contract shall place its own order(s) directly with the successful Contractor. The County of York acts only as the Contracting Agent and is not responsible for placement of orders, payment or discrepancies of the participating jurisdictions.

It is the Contractor's responsibility to notify the jurisdictions of the availability the contract.

Offeror(s) desiring to offer to other jurisdictions under this clause shall so indicate in their response.

14.0 ATTACHMENTS:

Attachment A – Project Area Map

## SAMPLE CONTRACT

Agreement No. \_\_\_\_\_

This AGREEMENT, dated this \_\_ day of \_\_\_\_\_, 20\_\_, by and between YORK COUNTY, VIRGINIA (a political subdivision of the Commonwealth of Virginia); hereinafter called the Owner; and \_\_\_\_\_ (a corporation organized and existing under the laws of the Commonwealth of Virginia); hereinafter called the Contractor.

WITNESSETH: The Owner and Contractor, for the consideration stated herein, agree as follows:

Scope of Work:

The Contractor shall perform all required work and shall provide and furnish all labor, materials, necessary tools, expendable equipment and utility and transportation service and all else required to the completion of:

RFP1531 Acquisition of LiDAR / DEM / Contours

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all in strict accordance with the RFP, written Proposal dated \_\_\_\_\_ as amended by \_\_\_\_\_, including any and all Addenda, and in strict compliance with the Contract Documents hereinafter enumerated. Regarding the scope of work and technical specifications applicable to the work, any conflict or variance between the RFP and the proposal shall be resolved in favor of the proposal.

It is understood and agreed that said labor, materials, and service shall be furnished and said work performed and completed under the direction and supervision of the Contractor and subject to the approval of the Owner or its authorized representative.

Guarantee:

All materials and work, furnished by the Contractor, and all services involved in this Contract shall be and the same are hereby guaranteed by the Contractor free from defects owing to faulty materials or workmanship. All work which proves defective, by reason of faulty material or workmanship shall be replaced by the Contractor free of cost to the Owner.

## THE BID SCHEDULE OF THE SUCCESSFUL BIDDER

SHALL BE CONFORMED AND INSERTED HEREIN

TO BECOME A PART OF THE COMPLETED CONTRACT DOCUMENTS

Contract Price:

The Owner shall pay the Contractor as just compensation for the performance of this Contract, subject to any additions or deductions as provided in the Contract Documents, the unit and lump sum price as contained in the Bid Schedule attached hereto.

The Contract Amount is \_\_\_\_\_

(\$\_\_\_\_\_) based upon unit and lump sum prices extended as herein contained.

Payments:

The Owner will pay to the Contractor, in the manner and at such times as set forth below, such amounts as required by the Contract Documents:

\_\_\_\_\_  
\_\_\_\_\_

Time:

The undersigned Contractor agrees to over-fly and acquire the data for the project area no later than March 31, 2007 and to complete the Contract Work within \_\_\_\_ days thereafter.

THIS AGREEMENT SHALL BE BINDING UPON ALL PARTIES HERETO AND THEIR RESPECTIVE HEIRS, EXECUTORS, ADMINISTRATORS, SUCCESSORS, AND ASSIGNS.

Component Parts of the Contract:

This Contract consists of the following component parts, all of which are hereby made a part hereof as if herein set out in full:

1. Advertisement for Bids
2. Request for Proposal No. 1531, dated \_\_\_\_\_.
3. Contractor's Proposal dated \_\_\_\_\_.
5. Bid Bond

6. Service Contract
7. Payment Bond
8. Performance Bond
9. Certificate of Insurance
10. Contractor's License (if required)
11. Notice of Award
12. Notice to Proceed
13. Change Orders (if any)
14. Other Documents as may be required by law or appended hereto

ADDENDA:

No. \_\_\_\_\_, dated \_\_\_\_\_, 19\_\_

No. \_\_\_\_\_, dated \_\_\_\_\_, 19\_\_

No. \_\_\_\_\_, dated \_\_\_\_\_, 19\_\_

No. \_\_\_\_\_, dated \_\_\_\_\_, 19\_\_

No. \_\_\_\_\_, dated \_\_\_\_\_, 19\_\_

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the day and year first above written in (\_\_\_\_) counter-parts each of which shall for all purposes be deemed an original.

ATTEST:

\_\_\_\_\_  
NAME

OWNER \_\_\_\_\_

\_\_\_\_\_  
TITLE

BY \_\_\_\_\_

County Administrator

\_\_\_\_\_  
TITLE

ATTEST:

\_\_\_\_\_  
NAME

CONTRACTOR \_\_\_\_\_

\_\_\_\_\_  
TITLE

BY \_\_\_\_\_

\_\_\_\_\_  
TITLE

CONTRACTOR'S ADDRESS:

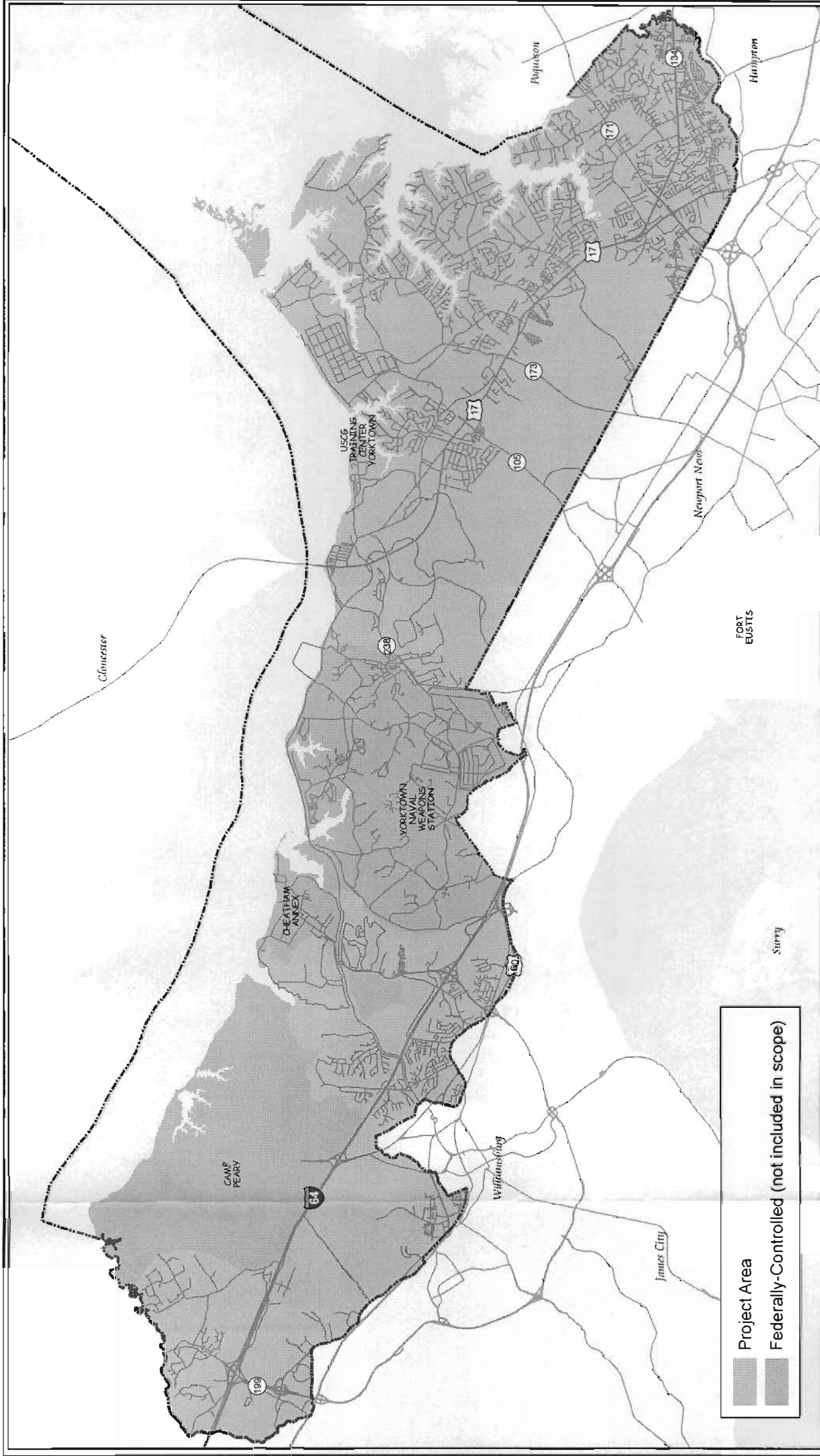
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
CONTRACTOR'S FEDERAL I. D. NO.

APPROVED AS TO FORM:

\_\_\_\_\_  
COUNTY ATTORNEY

RESERVED FOR CERTIFICATE OF INSURANCE,  
AND ADDITIONAL INSURED FORM GL-20-10  
OR OTHER SATISFACTORY EVIDENCE OF REQUIRED COVERAGE



Attachment A  
County of York  
Project Area for  
LIDAR/DEM/2' Contours